THE

ETCHER NOTES.

AUGUST, 1881.

PRACTICAL NOTES ON ETCHING,

BY

R. S. CHATTOCK.

IX.—ON MORDANTS (*continued*).

THE mordant is said to lose strength in course of biting more rapidly than is the case with nitric acid. The writer's experience does not bear this out. Bearing in mind its reputation in this respect, he has often been surprised to find with what vigour an old bath will act. Certainly a bath which has been previously used seems to attack the copper in the first instance more readily than one which is perfectly fresh.

A mordant of "chromic acid" has been recommended, prepared as follows. Three parts of bichromate of potash are dissolved in sixteen parts of warm water, to which are added four parts of sulphuric acid. It is free from noxious exhalations, but is so slow in action as to be practically of little use, and it is so dark in colour that the plate requires to be removed from the bath in order that the effect upon the copper may be observed.

It was the writer's intention to illustrate this part of his subject with etched examples, showing the depth of biting obtained by each mordant at a given temperature and during various periods suitable to each. Such examples, however, are in reality less useful than might be anticipated, owing to the problem being complicated by so many extraneous considerations. Coppers are not all of the same density—acids are not of uniform strength—and, although an even temperature may be maintained by artificial means, it is by no means certain that it is temperature alone which affects the rate of biting, which, there seems reason to believe, is dependent also on other atmospheric conditions. Much diversity in depth is also occasioned, especially in the paler bitings, by the degree to which the needle has been allowed to penetrate the copper, the practice of different etchers varying much in this respect. It is perhaps unnecessary to add that, although we may begin with the mordant at a certain strength, such strength is gradually lessened, and eventually lost as the acid becomes charged with copper. In facing this apparent maze of difficulty and doubt, let the young etcher comfort himself by adopting the maxim (the only one on which he may implicitly rely), *experientia docet*.

In addition to the ordinary methods of biting, that of electro-etching should be noticed. It is thus described in Cooley's "Cyclopædia of Practical Receipts":—"If two plates of copper be connected with the opposite ends of a voltaic battery, and placed in a vessel containing very dilute sulphuric acid, the plate connected with the copper of the battery will be attacked by the anion oxygen which is released during the decomposition of the acid. This destructive action can be localized at pleasure by covering certain parts of the plate with a protecting stratum of varnish, ordinary etching ground, for instance. In the practice of electro-etching the drawing is scratched in in the usual way through an ordinary ground; a stout wire is then soldered to the plate, and this, as well as the back of the plate, is coated with sealing wax varnish. Thus prepared, the plate is placed in a suitable decomposition cell opposite to a plate of somewhat similar size, and the two are connected respectively with the copper and zinc of a 'Daniell's' cell, or the silver and zinc of a 'Smee's' cell. After about ten minutes the plate is removed, washed, and dried; and, when the fine work has been stopped out with Brunswick black, it is returned for another space of ten minutes. By alternately exposing the plate to the action of the decomposing fluid and stopping out parts of the work, the required gradation in tints is obtained." Electro-etching has the advantage of being free from the exhalation of any deleterious gas, but the apparatus required, involving a battery and an extra copper plate, is more cumbrous, and the process itself more complicated than is the case with the ordinary methods of biting, and it does not appear to have been adopted for artistic work to any considerable extent.

X.—ON AFTER-PROCESSES.

THE plate having been bitten to the depth desired is now cleaned, both front and back, from the ground and stopping-out varnish, which may be done either with spirit of turpentine or benzole, or, if the plate be slightly heated, with a little sweet oil. The solvent should be poured upon the plate, and distributed by means of a stiff hog's-hair brush, the use of which will facilitate the breaking-up and solution of the ground. When the latter is thoroughly dissolved, the whole may be blotted off with blotting-paper, and the cleansing finished with a rag and a little fresh solvent.

A first or trial proof may then be taken, but it is rarely the case that a plate, other than one of the simplest character, yields at this stage satisfactory results without more "sophistication" in the printing than is desirable, and in elaborate etching, or where much enrichment is sought, the processes hitherto described are executed with direct reference to, and as the ground-work for, much supplementary work.

The use of a deeply bitten line in connection with mezzotint has already been mentioned, and its effect in imparting transparency pointed out. With a similar object, it is often desired to emphasize certain leading lines of an etching to the exclusion of others, to effect which the best plan is to lay a transparent ground, such as is hereafter described, thickly over the whole passage, and then to run the needle along and clean out those lines which it is proposed to deepen, which should then be bitten with strong nitric acid. Lines so treated, if selected with judgment, impart great vigour and transparency to the work, rivalling in solidity and power the heavy work of the burin, while they are free from the mechanical and laboured character inseparable from all burin work.

But it often happens that, either from miscalculation of the effect of a passage in connection with its surroundings, or other cause, the biting is found to be deficient in depth over a considerable section of the plate, and, when this includes intricate work which it would be tedious to re-needle, a better plan is to lay a "re-biting ground," which protects the unbitten surface of the copper, while it leaves the lines open for the attack of the mordant. Where the lines have been firmly bitten this is easily accomplished, but in the case of tenderly bitten work it is an operation of extreme delicacy, so difficult of achievement that in Paris etchers are in the habit of entrusting their plates for this purpose to a skilled operator who devotes himself to the practice of laying re-biting grounds. In such hands the process becomes practically certain in its results, and the method is often adopted of biting in many successive stages between which the plate is cleaned, and successive proofs are taken. The etcher is thus enabled to feel his way gradually to the depth necessary for his line, and the process of biting, no longer resting upon calculations of time, or estimates of relative strength, becomes one of simple observation. The practical certainty now obtained in laying re-biting grounds is in great measure due to the introduction of the roller, the use of which has been already described in the fourth chapter. In laying a re-biting ground, the roller should be very thinly charged with the paste, in order to avoid filling up the bitten lines, and for the same reason it is essential to use it with the least possible degree of pressure—the mere weight of the instrument being sufficient, when the plate is even, to ensure the requisite contact, and it is generally sufficient to pass the roller twice over the part to be covered, the second application being at a right angle to the first. It is, however, necessary that the plate should be even, and the fact that this is rarely absolutely the case constitutes a considerable difficulty. It may be partially overcome by using a short roller, and for re-biting grounds the rollers are made of much smaller dimensions then those mentioned in the description before given of the implement, but, even with a short roller, it is often found that the plate is too uneven to admit of the ground being applied equally without filling up some of the more delicate lines, and when this is the case the dabber must be employed.

This implement has also been already described. In using it for laying a re-biting ground, it is usual to spread the latter first upon another plate from which the dabber is charged, and the ground is then transferred to the plate which is intended to be re-bitten—both plates being, of course, heated when the ground is such as to require melting. But, in order to avoid filling up the more delicately bitten lines, it is essential that the ground should be applied most sparingly, and it will generally be found that a dabber which has been used in the ordinary way for the first coating of a plate is already sufficiently charged with ground without any addition. The dabber should be applied in vertical touches, and as lightly as possible. If any pressure be used, or a sidelong direction be given to the touch, the lines are almost certain to be filled up. The difficulty of securing protection to the surface of the plate while using a film of such extreme tenuity is only to be surmounted by going over the passage again and again with the most patient care, and for this purpose it is better to work with a coloured ground the film of which is more observable than that of one which is absolutely colourless.

Assuming all possible precautions against failure to be taken, the process remains one of great delicacy, and is rarely free from risk, and when the young etcher, after spreading with infinite pains a re-biting ground over some favourite but too faintly bitten passage, sees the plague spot of foul biting appearing when it should not, and sullying the fair and hitherto unblemished purity of the copper, while the lines which he intended to re-bite persist in ignoring the presence of the mordant, he will be disposed, in bitterness of spirit, to agree with a great modern etcher whose advice is above all things "never to under-bite," not to rely upon re-biting for making good an original defect.

In the above process of re-biting the lines are both deepened and widened, and, when it is successfully carried out, they retain all their original sharpness of definition. In certain exceptional cases this quality may be of less importance than to obtain greater fulness of tint, and it may be desired to widen the lines without deepening them. This may be easily accomplished by pouring over the plate previously cleaned a thin solution of Japan varnish or Brunswick black in turpentine, which when dry affords protection both to the unbitten surface of the copper, and partially also to the bitten lines into which the solution runs. At the sharp edge, however, of the escarpment which forms the side of the bitten lines the solution will not rest, and here the mordant attacks the copper, and thus widens the line without deepening it. Lines thus treated have a very distinct character, but the process should be restricted to the heavier portion of the work, as when applied generally to the plate the effect is apt to be flat. And, as the lines are widened with great rapidity, care must be taken that the process be not pushed too far.

The best way, however, of imparting richness to a thinly worked passage is by fresh lines, either interspersed with or crossing those already laid, and either bitten or worked with the dry point. Of the latter we will speak presently. For fresh bitten work the plate has to be re-grounded, and, in order that the lines already executed may be clearly seen, the fresh ground should be more or less transparent. The bronzed line of the hydrochloric mordant is easily seen through a slightly coloured ground, but when the nitric mordant is used, a white ground formed of wax and gum mastic, in the proportion of about five parts of the former to three parts of the latter, is recommended.

(*To be continued.*)

NOTICE.—*All communications should be addressed to the Editor of* THE ETCHER, *Crown Buildings, Fleet Street, E.C.*

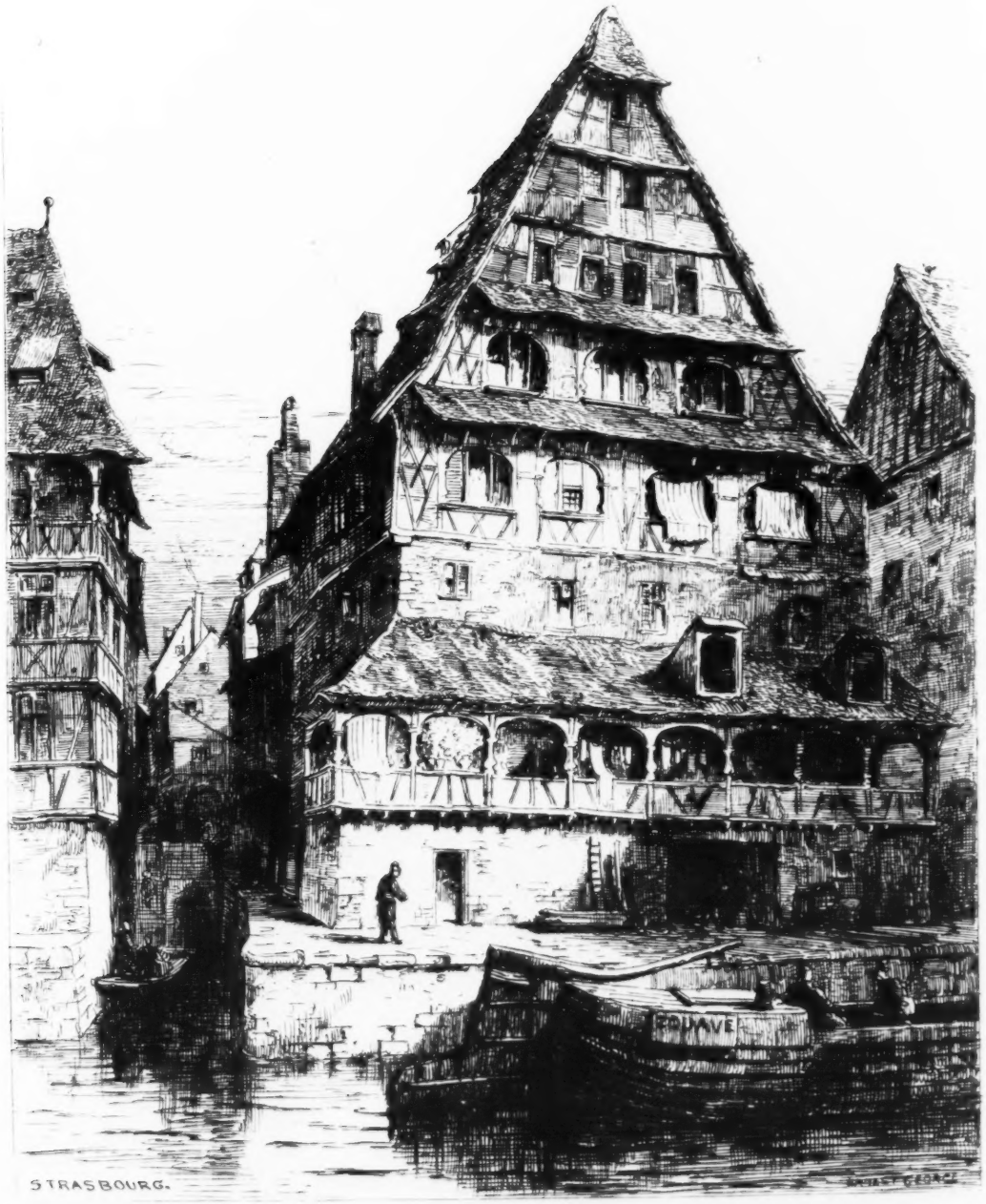
STRASBOURG.

ERNEST GEORGE.

MR. ERNEST GEORGE is well known by his etchings of old world buildings, which his architectural knowledge and eye for the picturesque have enabled him to reproduce with so much fidelity and charm.

In his "Etchings on the Mosel," he has drawn the German schloss with its reminiscences of feudalism, whilst in his "Etchings on the Loire," he has done similar work for the French châteaux. In his "Etchings in Belgium," his needle has portrayed the belfries and townhalls, the gabled houses and canal quays, which, even in this nineteenth century, vividly recall the days when counts reigned in Flanders, and Alva ruled with iron sway for his master Philip.

Mr. George has lately in his summer rambles turned his attention to Germany, and the subject of the present etching is a very picturesque specimen of the mediæval domestic buildings which are to be found in the old towns and cities of the Fatherland.


STRASBOURG.

PARTRIDGES AT SUNRISE.

EDOUARD RISCHGITZ.

THE accompanying etching represents a sight which may be seen on the moors at the first sign of dawn on any day in September:—

> "When, Goddess, thou lift'st up thy wakened head
> Out of the Morning's purple bed,
> Thy choir of birds about thee play,
> And all thy joyful world salutes the rising day."

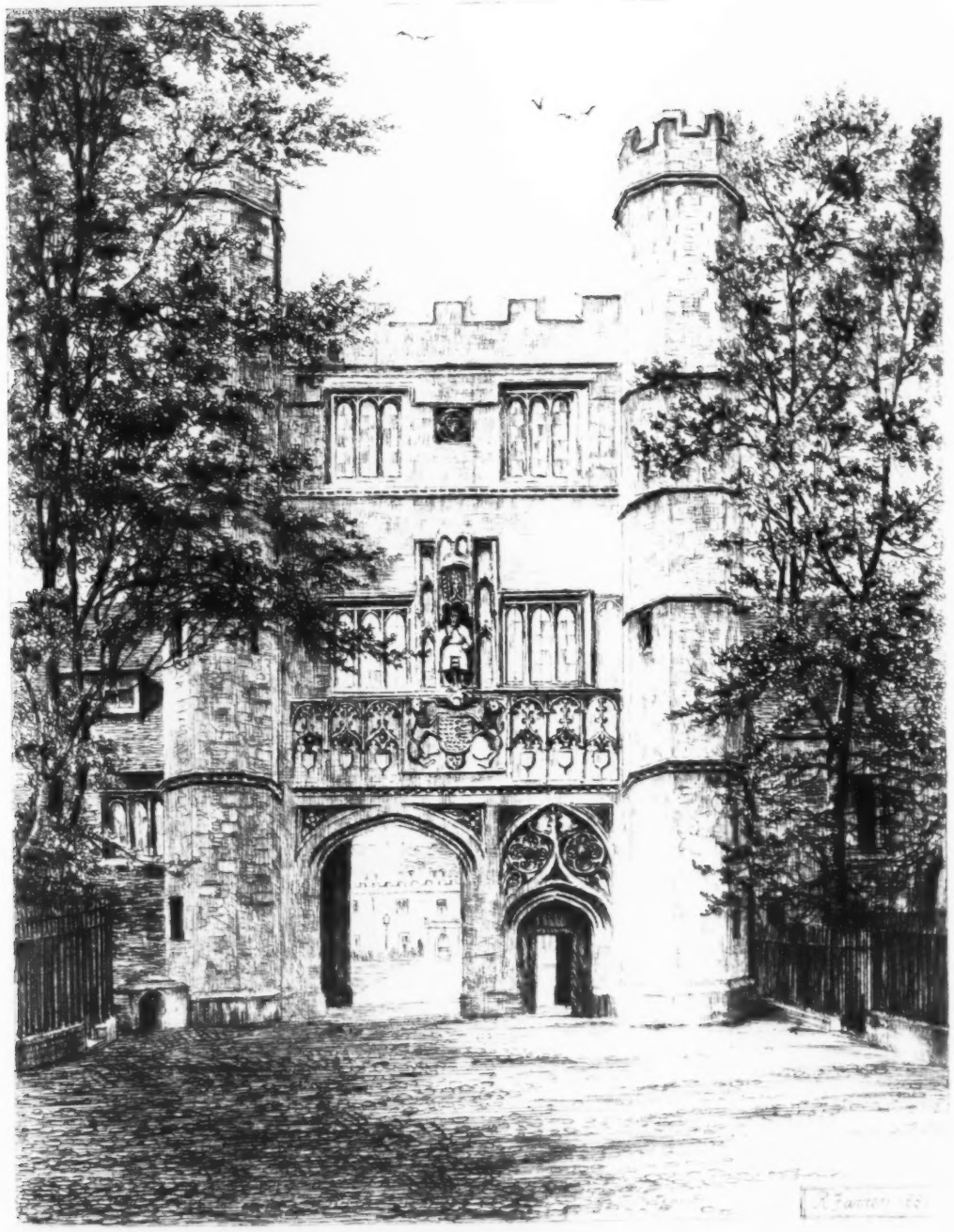
A covey of partridges have just started up from the heather at the rising of the sun, towards which they wing their rapid flight in order to dry in the warmth of its rays their feathers, which have become wet by the heavy dew of the previous night.

Monsieur Rischgitz has made a special study of birds, and he yearly pays a visit to Scotland—his favourite resort being Dunkeld—in order to sketch the feathery flocks in their haunts. He has already produced many fine charcoal drawings and etchings of wild duck, grouse, and partridges on the wing.

THE GREAT GATEWAY OF TRINITY COLLEGE, CAMBRIDGE.

ROBERT FARREN.

THE site of Trinity College was occupied, previous to 1548, by several small foundations, the most important of which was King's Hall, established by King Edward the Third in 1337. This college gradually exceeded the narrow limits within which it had been at first confined; and when King Henry the Eighth developed it into Trinity College, it had spread over nearly half of the actual site of that college on the eastern bank of the river Cam. The last architectural work undertaken by the Society of King's Hall was this gate, which they began in 1519, and completed, so far as the gateway was concerned, in 1524. In 1535 the four towers were added, together with the room over the gate. The upper portion is due to Dr. Thomas Nevile, Master from 1593 to 1615, who, assisted by the celebrated architect, Ralph Simons, transformed the incongruous and inconvenient buildings of the smaller foundations into the magnificent Great Court, which has fortunately remained almost as he left it to our own time. Dr. Nevile added the second story, and raised the angle-turrets to their present height in 1615. The stone front towards the street, however, is evidently part of the original structure, as is proved by the style of the panels containing the shields, and of the central niche; but the statue of King Henry the Eighth was added when the gate was heightened. The Bursar's Book for 1615 records, with more than usual minuteness, the details of the work. We learn that the stone used for the statue was clunch from Barrington; that a carver named Thorpe executed the six crowns in the panels, and that another, named John Smyth, completed the statue, which had been commenced, in 1601, by one Parris, who fell ill and died before his work was finished. On the side next the Court, where the walls are of brick, which was stuccoed when the gate was raised, there are statues of King James the First, his Queen, and Prince Charles, which was set up at the same time as King Henry; but the niches containing them are in the classical style of the time, and afford conclusive evidence that the ornamentation of the opposite side must be part of the earlier work, from which the style of the upper story was imitated. It may be further noticed that the battlements correspond exactly with those of the Hall, erected by Nevile in 1601, but differ from those used in the older parts of the college.

The arrangement of the gate, consisting of a central mass with a turret at each external angle, is peculiar to Cambridge, where it was first employed in this very college in the older gate now called "The Clock Tower." This was set up in 1407, and, in its original position, was used as the principal entrance to the college from the south. The Great Gate is also the only college gateway in either Oxford or Cambridge which has a small postern arch by the side of the larger one.

JOHN WILLIS CLARK.